

Toolkit: Cholesterol

A Case for Change

National Facts:

- High blood cholesterol puts Americans at risk for heart disease – the #1 cause of death.
- Approximately one in every six adults—16.3% of the U.S. adult population—has high cholesterol. The level defined as high total cholesterol is 240 mg/dL and above.
- People with high cholesterol have approximately twice the risk for heart disease as people with lower levels.
- There are steps you can take to prevent high cholesterol or to reduce your levels. These actions include exercising, eating a healthy diet, and not smoking.
- High cholesterol does not have symptoms.¹

Iowa Facts:

- Heart disease and stroke are the #1 and #3 killers of Iowa men and women.
- In 2009, 6,912 Iowans died of heart disease and 1,626 died of a stroke – accounting for 31% of deaths in Iowa⁴.
- In 2008, 14 percent of Iowa's hospitalizations were due to cardiovascular diseases, the leading cause of hospitalizations. Of those,
 - 11% were diagnosed with heart disease (38,988); of those inpatients:
 - 44% had coronary heart disease (17,066);
 - 23% had congestive heart failure (9,092).
 - 2% were diagnosed with strokes (8,511)⁴.
- The age-adjusted heart disease death rate for Iowans (per 100,000) is 9% higher than the national Health People 2010 objective: 181 for Iowans vs. 166 per 100,000 national deaths⁴.

Blood cholesterol is a major modifiable risk factor for heart disease, the leading cause of death in the United States⁵. Heart Disease is also the leading cause of death in Iowa³. A 10% decrease in total blood cholesterol levels can reduce the incidence of heart disease by as much as 30%². Lowering high blood cholesterol can reduce the risk for developing or dying from heart disease, including heart attacks; however, less than half of persons who qualify for any type of lipid treatment for risk reduction are receiving it. It is critically important that healthcare providers follow treatment guidelines and recommendations if we are to meet the national cholesterol health objectives.

This toolkit will:

- Provide Iowa health care providers with educational resources to better inform patients about the health risks associated with high cholesterol.
- Provide Iowa health care providers with evidence and support in order for them to become advocates for policy/environmental change.

Source:

1. Centers for Disease Control and Prevention. *Cholesterol Fact Sheet*. Sept 2009. www.cdc.gov/dhdsp/library/fs_cholesterol.htm.
2. Cohen J.D.; *A Population-based approach to cholesterol control*, Am J Med 1997; 102:23-5.
3. Iowa Department of Public Health, Center for Health Statistics, *2008 Vital Statistics of Iowa*.
4. Iowa Department of Public Health. *Heart Disease and Stroke in Iowa – 2009 Fact Sheet*. Heart Disease and Stroke Prevention Program revised November 2009.
5. U.S. Department of Health and Human Services, *A Public Health Action Plan to Prevent Heart Disease and Stroke*. Atlanta, GA: U.S. > Department of Health and Human Services, Centers for Disease Control and Prevention; 2003.

Toolkit Created: September 2010

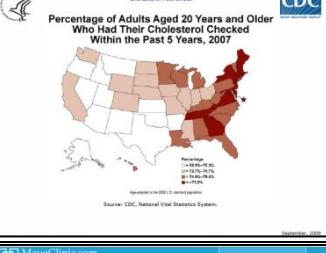
Toolkit

Clinical Guidelines and Protocols

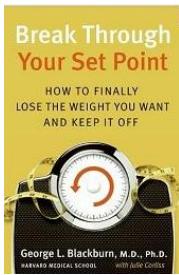
<p>Third Report of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III): Executive Summary. National Heart, Lung and Blood Institute. 2002.</p> <p>Final Report. <i>Free PDF download.</i> http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf</p>	
<p>ATP III Guidelines At-A-Glance Quick Desk Reference, National Heart, Lung and Blood Institute. May 2001.</p> <p>This health professional reference outlines cholesterol management in a sequence of easy-to-follow steps. <i>Free PDF download. May order 100 copies for \$80.00 at www.nhlbi.nih.gov (item #01-3305).</i> http://www.nhlbi.nih.gov/guidelines/cholesterol/dskref.htm</p>	
<p>A Population-Based Policy and Systems Change Approach to Prevent and Control Hypertension. Institute of Medicine. Published February 2010.</p> <p>IOM discusses population-based strategies, behavioral/lifestyle interventions and the provider's role to better control hypertension. <i>Free PDF download. Paperback cost: \$36.75 from iom.edu.</i> http://www.iom.edu/Reports/2010/A-Population-Based-Policy-and-Systems-Change-Approach-to-Prevent-and-Control-Hypertension.aspx</p>	

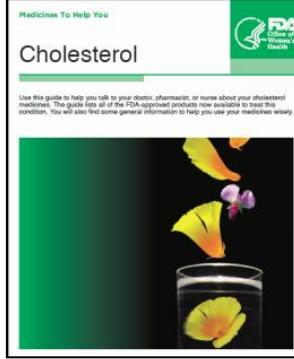
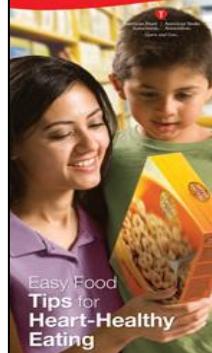
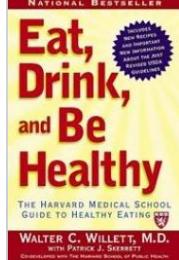
Educational Materials

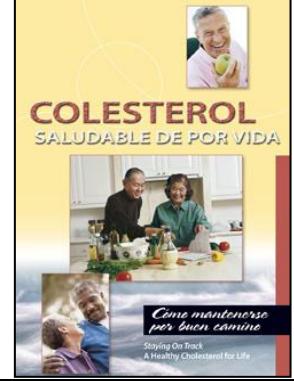
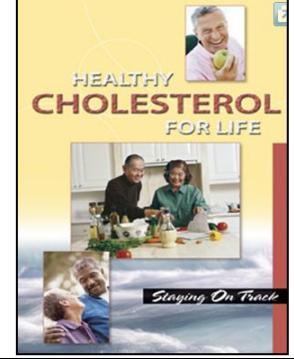
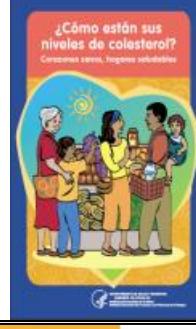
Provider Education

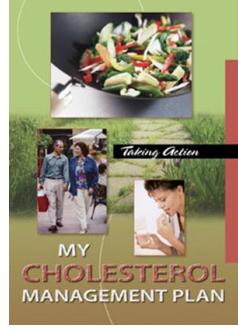
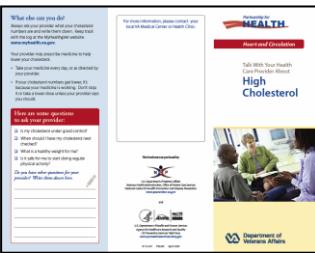
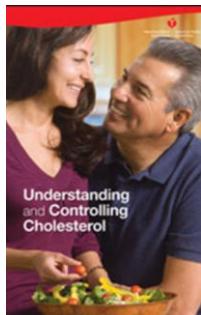
<p>ATP III - National Cholesterol Education Program Slide Show</p> <p><i>Free PDF/PowerPoint download on the website.</i> http://hp2010.nhlbihin.net/ncep_slds/menu.htm</p>	
<p>Centers for Disease Control and Prevention – Cholesterol</p> <p>http://www.cdc.gov/cholesterol/</p>	
<p>Cholesterol Fact Sheet, Centers for Disease Control and Prevention. September 2009.</p> <p>Nationwide cholesterol facts and resources. <i>Free PDF download.</i> http://www.cdc.gov/dhdsp/library/pdfs/fs_cholesterol.pdf</p>	
<p>High Cholesterol, Mayo Clinic. July 2010.</p> <p>http://www.mayoclinic.com/health/high-blood-cholesterol/DS00178</p>	
<p>Bad Cholesterol Common, But Screening Rates Low Among Young Adults, Centers for Disease Control and Prevention. July 19th, 2010.</p> <p>http://www.mayoclinic.com/health/high-blood-cholesterol/DS00178</p>	

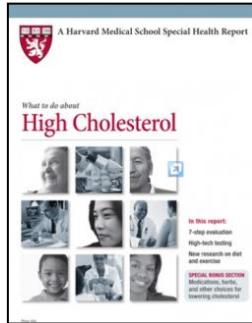
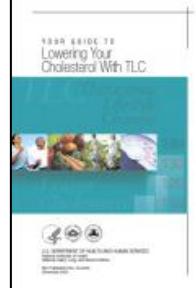
Patient Education

<p>Cholesterol Control. Krames Patient Education.</p> <p>Explains cholesterol and risk factors for having high levels of cholesterol. <i>Order 50 brochures for \$22.99 from krames.com (item #91142).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore3=gwdhz32x61.olbOpR9zaMTNr65TrQjGp2TxpQUolbOpR9zaMTNr65TrQjGp2TxpQUahmKa30-&dbprod_prod=x7qRtpFyjDSZjCvXeGTE3-KA:S&dbprod_prod_pses=ZG1F7E8D4BAF21F19E670366C4386F348369FC8867B176604F0EA12D95B8300BF7ECFA441C4D1A5A7831CA5B6A782127F417C34168BAB53FEFFDC9F0622C194068&item=8806</p>	 <p>THE WELLNESS WAY CHOLESTEROL CONTROL</p> <p>Concerned about stats with the first meal of the day? Breakfast tables once held eggs, bacon, sausages, creamed corn, whole grains, and low-fat dairy products. Why? Because more and more people are concerned about cholesterol. And while a high level of cholesterol in the blood is a major risk factor for heart disease, Fortunately, you can control cholesterol the natural way by changing your diet and exercise habits. Take care of your heart. Because it's the route to a lifetime of smart choices.</p>
<p>Break Through Your Set Point: How To Finally Lose The Weight You Want and Keep It Off. George L. Blackburn, M.D., Ph.D., with Julie Corliss. 2008.</p> <p>A science-based guide to healthy eating and living. Based on 40 years of clinical experience, the book includes sample recipes, tips for avoiding high-fat foods, realistic strategies for weight loss, and patient stories.</p> <p>http://www.amazon.com/Break-Through-Your-Set-Point/dp/0061288675</p>	 <p>Break Through Your Set Point HOW TO FINALLY LOSE THE WEIGHT YOU WANT AND KEEP IT OFF</p> <p>George L. Blackburn, M.D., Ph.D. HARVARD MEDICAL SCHOOL with Julie Corliss</p>
<p>Cholesterol Matters. Krames Patient Education.</p> <p>Consistent with American Heart Association Guidelines – this brochure gives tips on healthy eating, physical activity, and a checklist to help keep your patients on the right track. <i>Order 50 brochures for \$22.99 from krames.com (item #9480).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore3=bjgva52yn1.olbOpR9zaMTNr65TrQjGp2TxpQUolbOpR9zaMTNr65TrQjGp2TxpQUahmKa30-&dbprod_prod=x7qRtpFyjDSZjCvXeGTE3-KA:S&dbprod_prod_pses=ZGF7C3886C87AF0A4D610A4900520F86A822972C7B5716B9FB33D4212F7D9BEE7720CF864A176CB00A45AAD0E33ECF43DB7561F61A6560A9012FC1AC2E8DE10BDB&item=8346</p>	 <p>Cholesterol Matters Keeping the Route to Your Heart Clear</p>
<p>Cholesterol. Food and Drug Administration's Office of Women's Health. 2007.</p> <p>Describes “good” cholesterol and “bad” cholesterol and gives patients ways to lower their cholesterol. <i>Free PDF download. Order up to 100 free fact sheets from http://www.pueblo.gsa.gov/rc/f06owhcard.htm.</i></p> <p>http://www.fda.gov/downloads/ForConsumers/ByAudience/ForWomen/UCM121857.pdf</p>	 <p>Cholesterol</p> <p>What is cholesterol? Cholesterol is a waxy substance found in all animal tissue. It is important for many body functions, such as making hormones and digesting food. However, too much cholesterol in the blood can lead to heart disease. What is cholesterol made of? Cholesterol is made of four main parts: a carbon atom, two hydrogen atoms, a nitrogen atom, and a hydroxyl group. These four parts are joined together to form a molecule. What is cholesterol? Cholesterol is a waxy substance found in all animal tissue. It is important for many body functions, such as making hormones and digesting food. However, too much cholesterol in the blood can lead to heart disease. What is cholesterol made of? Cholesterol is made of four main parts: a carbon atom, two hydrogen atoms, a nitrogen atom, and a hydroxyl group. These four parts are joined together to form a molecule.</p>

<p>Cholesterol: Medicines to Help You. Food and Drug Administration's Office of Women's Health. 2007.</p> <p>Describes cholesterol and the various types of medications (bile acid sequestrants, fibrates, and combination drugs) that can be used to control high cholesterol. <i>Free PDF download.</i> http://www.fda.gov/downloads/ForConsumers/ByAudience/ForWomen/FreePublications/UCM179918.pdf</p>	
<p>Easy Food Tips for Heart-Healthy Eating (Spanish). American Heart Association. Krames Patient Education. 2009.</p> <p>Recommends healthy foods to substitute for unhealthy ones, tells how to read nutrition labels, and gives daily guidelines for fat intake. <i>Order 50 brochures for \$42.50 from krames.com (item #50-1620).</i> https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore1=p42af000r1.olbOpR9zagTNr65TrQjGp2TxpQUolbOpR9zagTNr65TrQjGp2TxpQUahmKa30-&dbprod_prod=EfCEKSvgIRoX7Ap7RNDvmyHt:S&dbprod_prod_pses=ZGF15DB82E42543372B36DA4F89BF009803571758AEA412B383F52A0E515799589D59F6778BA78B109C5B04D2EB1C36874C7759AAC09513BAD879D88E7F6958CC8&item=742409</p>	
<p>Easy Food Tips for Heart-Healthy Eating (Spanish). American Heart Association. Krames Patient Education. 2009.</p> <p>Recommends healthy foods to substitute for unhealthy ones, tells how to read nutrition labels, and gives daily guidelines for fat intake. <i>Order 50 brochures for \$46.50 from krames.com (item #50-1625).</i> https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?section=&item=588409&dbprod_prod=FHJXesVXy-wixiDCCGrz3lmw:S&dbprod_prod_pses=ZG3FE6AD84D4FBD3935B0C3A18908AE56808C79510D2E9A16986E760CBA3E5EBC7C52771A576F22FC43728E64CC6212039276682DF5FE1194B81BFE79BA4428AD</p>	
<p>Eat, Drink, and Be Healthy. Walter C. Willett, M.D., with P.J. Skerrett. Harvard Health Publications and Simon & Schuster. 2005.</p> <p>An easy-to-understand book explaining the connection between diet and disease. Spells out a practical approach to healthy eating. http://www.health.harvard.edu/books/Eat_Drink_and_Be_Healthy.htm</p>	

<p>Healthy Cholesterol for Life: Staying on Track (Spanish). Krames Patient Education.</p> <p>Focused on cholesterol, this encouraging booklet focuses on the maintenance steps in the Stages of Change model. <i>Order brochures for \$1.45 each from krames.com (item #11781).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?section=&item=33732&dbprod_prod=Vj9OK5Shc1rl9FHpLrsF9eQc:S&dbprod_prod_pses=ZG1062CA6E1A2B57E34D49044994124265160534DC3608154E844CD57CF6CE7FEF4F1768EBA5DC808A7A329E95D48512A42381EFD44436C39F7B707B9F1BD8D6C2</p>	
<p>Healthy Cholesterol for Life: Staying on Track. Krames Patient Education.</p> <p>Focused on cholesterol, this encouraging booklet focuses on the maintenance steps in the Stages of Change model. <i>Order brochures for \$1.45 each from krames.com (item #11780).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore3=hvylwc2tp1.olbOpR9zaMTNr65TrQjGp2TxpQOUolbOpR9zaMTNr65TrQjGp2TxpQOUahmKa30-&dbprod_prod=x7qRtpFyjDSZjCvXeGTE3-KA:S&dbprod_prod_pses=ZG7221C8FDA00E3571FD5E9A516D171C09566CC0BC5AAC0D81CF613C347144C5394E35608C28A68842917DBBA6CBF76DFF8292B0018F656DE1B01CCBA84B411F&item=33730</p>	
<p>Healthy Hearts, Healthy Homes – Do you Know Your Cholesterol Levels? (English/Spanish). National Heart, Lung, and Blood Institute. 2008.</p> <p>Explains the difference between good and bad cholesterol, what constitutes a high level of cholesterol and the risk that carries, and how your family can develop a plan to lower cholesterol. <i>Order 100 copies for \$275.00 from http://www.nhlbi.nih.gov/health/index.htm (item #08-6353).</i></p> <p>http://email.nhlbihin.net/product2.asp?sku=08-6353&p=2&h=3&g=11&r=1</p>	
<p>High Blood Cholesterol – What you need to know. National Heart, Lung, and Blood Institute. 2005.</p> <p>Cholesterol testing and management information based upon the most recent clinical guidelines. Includes a tool to estimate the risk for having a heart attack, and outlines ways to reduce risk. <i>Order 100 copies for \$50.00 from http://www.nhlbi.nih.gov/health/index.htm (item #05-3290).</i></p> <p>http://www.nhlbi.nih.gov/health/public/heart/chol/hbc_what.htm</p>	

<p>Know the Facts about High Blood Cholesterol. Centers for Disease Control and Prevention. 2010.</p> <p>Describes cholesterol, how to prevent high cholesterol, and a listing of national cholesterol resources. <i>Free PDF download.</i> http://www.cdc.gov/cholesterol/docs/ConsumerEd_Cholesterol.pdf</p>	
<p>My Cholesterol Management Plan: Taking Action. Krames Patient Education.</p> <p>Focused on cholesterol, this encouraging booklet focuses on the maintenance steps in the Stages of Change model. <i>Order a booklet for \$1.45 each from www.krames.com (item #11778).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore3=9b7u2b2vz1.olbOpR9zaMTNr65TrQjGp2TxpQOUolbOpR9zaMTNr65TrQjGp2TxpQOUahmKa30-&dbprod_prod=x7qRtpFyjDSZjCvXeGTE3-KA:S&dbprod_prod_pses=ZG256CB82C9AE63910F3B6453134B1ED425BF6E0892CD1C6882987F12C61E68C15D436B64E300106A705827863088D4D8431A26FD0AEB93605A222656E701FEB&item=33726</p>	
<p>Risk Factor Booklets for Latinos (KIT). (English/Spanish) National Heart, Lung, and Blood Institute. 2008.</p> <p>Contains 6 booklets in the Healthy Hearts, Healthy Homes series. English/Spanish. <i>Order 100 copies for \$1,600.00 from http://www.nhlbi.nih.gov/health/index.htm (item #KT-051).</i></p> <p>http://email.nhlbihin.net/product2.asp?sku=KT-051</p>	
<p>Talk with Your Health Care Provider About High Cholesterol. U.S. Department of Veterans Affairs and the U.S. Department of Health and Human Services. April 2009.</p> <p>Easy to read brochure describes what cholesterol is, what the testing numbers mean, and how to prevent high cholesterol. <i>Free PDF download.</i> http://www.prevention.va.gov/High_Cholesterol.asp</p>	
<p>Understanding and Controlling Cholesterol. (English), American Heart Association, American Stroke Association, and Krames Patient Education, 2009.</p> <p>Incorporates the latest guidelines to educate patients about LDL, HDL, triglycerides, omega-3 fatty acids. <i>Order 25 booklets for \$29.95 from www.krames.com (item #50-1662).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?section=&item=527409&dbprod_prod=iv4olMvY-nozz9XezMovv66n:S&dbprod_prod_pses=ZG9D7CA7FFB41DA082AAD4741A89B05CE5464F7C025AFCF2296634E513FA63ABE7403ACEC6F3F79872F396C61C47F8ADBC48AFA1FC7D5869B80378A8222C5A1F5A</p>	

<p>Understanding and Controlling Cholesterol. (Spanish/English), American Heart Association. Krames Patient Education. 2009.</p> <p>Incorporates the latest guidelines to educate patients about LDL, HDL, triglycerides, omega-3 fatty acids. <i>Order 25 booklets for \$34.50 from www.krames.com (item#50-1665).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrotistore1=45w1atzki1.olbOpR9zagTNr65TrQjGp2TxpQUolbOpR9zagTNr65TrQjGp2TxpQUahmKa30-&dbprod_prod=EfCEKSvgIRoX7Ap7RNDvmyHt:S&dbprod_prod_pses=ZG4068322732B77B15DD570CB809F47BB026D4FC048A95F5AC093A725783BCCB8B46568312F3369CCB78B10B8FC72B360354936FFD61214C2661ED447DB6F783CF&item=626412</p>	
<p>What to do about High Cholesterol, Harvard Medical School, 2009.</p> <p>This 48-page report includes a step-by-step method to determine your risk level for heart disease and specific guidelines on how to lower your risk. <i>Order print and electronic PDF version for \$26.00 from www.health.harvard.edu.</i></p> <p>http://www.health.harvard.edu/special_health_reports/what_to_do_about_high_cholesterol</p>	
<p>Your Guide to a Healthy Heart. National Heart, Lung, and Blood Institute. December 2005.</p> <p>Discusses risk factors for heart disease and how to make a life-plan for a healthy heart. <i>Free PDF download.</i></p> <p>http://www.nhlbi.nih.gov/health/public/heart/other/your_guide/healthyheart.pdf</p>	
<p>Your Guide to Lowering Cholesterol with TLC (Therapeutic Lifestyle Changes). National Heart, Lung, and Blood Institute. December 2005.</p> <p>Describes how to treat high LDL cholesterol using healthy foods and exercise. <i>Free PDF download.</i></p> <p>http://www.nhlbi.nih.gov/health/public/heart/chol/chol_tlc.pdf</p>	

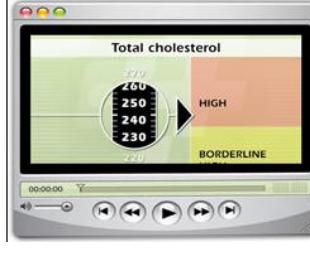
Reference

Funding for this project was made available under Cooperative Agreement 5U50DP000734-02 from the Centers for Disease Control and Prevention, Division of Heart Disease and Stroke Prevention with the Iowa Department of Public Health, Bureau of Chronic Disease Prevention and Management, Heart Disease and Stroke Prevention Program in 2010.

For more about this project, contact Terry Meek, the Heart Disease and Stroke Prevention Project Coordinator for the Iowa Department of Public Health at tmeek@idph.state.ia.us or 515-281-6016.

Other

Media

<p>Cholesterol Screening. Krames Patient Education.</p> <p>Explains reasons for cholesterol screening and lifestyle management tips for better health. Includes an overview of what cholesterol is and what it does. Run time 6:06. Spanish version also available. <i>Order from www.krames.com for \$149.00 (item #W1164-W).</i></p> <p>https://www.krames.com/OA_HTML/ibeCCtpItmDspRte_kra.jsp?JServSessionIdrootistore3=i6l78i2pt1.olbOpR9zaMTNr65TrQjGp2TxpQO UolbOpR9zaMTNr65TrQjGp2TxpQOUahmKa30-&dbprod_prod=x7qRtpFyjDSZjCvXeGTE3-KA:S&dbprod_prod_pses=ZG8378CB315850C53F29C3C253B4EBB0E513891AFD99466601FA60CBA1268ECA87CB2BB130867A345635FD64E6DF8B6C1E9E38821F1BF32FDB606097DF593FA99E&item=286410</p>	
<p>National Cholesterol Education Month. Centers for Disease Control and Prevention. September 9, 2010.</p> <p>Informs patients about the simple test for finding their cholesterol.</p> <p>http://www2c.cdc.gov/podcasts/player.asp?f=14370</p>	

Mentors

<p>Iowa Department of Public Health – Heart Disease and Stroke Prevention Program</p> <p>Iowa's cardiovascular (CV) programs partner with other statewide and department wellness initiatives. The Heart Disease and Stroke Prevention (HD&SP) program focuses on detection and treatment of risk factors; early identification and treatment of heart attacks and strokes; and prevention of recurrent cardiovascular events.</p> <p>http://www.idph.state.ia.us/hpcdp/cardiovascular_health.asp</p>	
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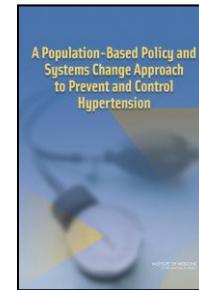
Resources

Journal Articles and Reports

A Population-Based Policy and Systems Change Approach to Prevent and Control Hypertension. Institute of Medicine. Published February 2010.

IOM discusses population-based strategies, behavioral/lifestyle interventions and the provider's role to better control hypertension. Free PDF download. Paperback cost: \$36.75 from iom.edu.

<http://www.iom.edu/Reports/2010/A-Population-Based-Policy-and-Systems-Change-Approach-to-Prevent-and-Control-Hypertension.aspx>



Prevalence of Coronary Heart Disease Risk Factors and Screening for High Cholesterol Levels Among Young Adults, United States, 1999-2006, Elena V. Kuklina, MD, PhD; Paula W. Yoon, ScD, MPH; and Nora L. Keenan, PhD. Published in the Annals of Family Medicine. Volume 8, Number 4. July/August 2010.

Study examines the national prevalence of coronary heart disease risk factors and compliance with the cholesterol screening guidelines among young adults. *Free PDF download.*

<http://www.annfammed.org/cgi/reprint/8/4/327?maxtoshow=&hits=10&RESULTFORMAT=&fulltext=cholesterol&searchid=1&FIRSTINDEX=0&volume=8&issue=4&resourcetype=HWCIT>

The Surgeon General's Vision for a Health and Fit Nation, 2010, U.S.
Department of Health and Human Services, Office of the Surgeon General.

Free PDF download.

<http://www.surgeongeneral.gov/library/obesityvision/obesityvision2010.pdf>



News Articles

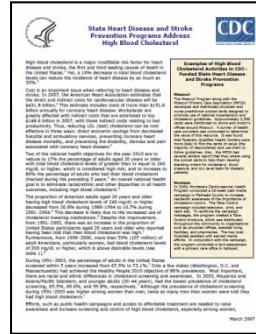
Bad Cholesterol Common, But Screening Rates Low Among Young Adults, Centers for Disease Control and Prevention. July 19, 2010.

A new study finds less than half of young adults don't receive cholesterol screening when nearly a quarter of them have elevated cholesterol.
<http://www.cdc.gov/media/pressrel/2010/r100719.htm>



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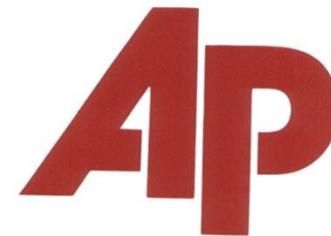
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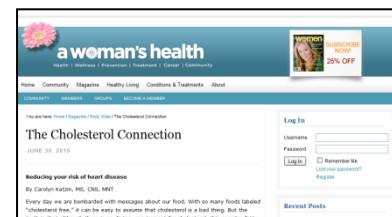
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- Iowa Department of Public Health – Heart Disease and Stroke Prevention
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Healthcare Professional Organizations

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